

UNITED STATES NUCLEAR REGULATORY COMMISSION REGION II 245 PEACHTREE CENTER AVENUE NE, SUITE 1200 ATLANTA, GEORGIA 30303-1257

October 17, 2017

Mr. Joel W. Duling President Nuclear Fuel Services, Inc. P. O. Box 337, MS 123 Erwin, TN 37650

SUBJECT: NUCLEAR FUEL SERVICES, INC. – U. S. NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT NUMBER 70-143/2017-004 AND NOTICE OF VIOLATION

Dear Mr. Duling:

This letter refers to the inspections conducted from July 1 to September 30, 2017, at the Nuclear Fuel Services, Inc. (NFS) facility in Erwin, TN. The purpose of these inspections was to determine whether activities authorized under the license were conducted safely and in accordance with U.S. Nuclear Regulatory Commission (NRC) requirements. The enclosed report presents the results of the inspections. The findings were discussed with members of your staff at the exit meetings held on July 27, September 21, and at the end of the quarter on October 11, 2017.

During the inspections, NRC staff examined activities conducted under your license, as they related to public health and safety and to confirm compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspections consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel. The inspections covered the following areas: safety operations, radiological controls, facility support, and other areas.

Based on the results of the inspections, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. This violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at (<u>http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html</u>). The violation is cited in the enclosed Notice of Violation (NOV). NOV's and the circumstances surrounding them are described in detail in the subject inspection report.

The violation associated with the improper categorization of a shipment of contaminated metal samples resulting in them being shipped as non-radioactive and non-DOT regulated is being cited in the enclosed NOV because it is considered self-revealing.

You are required to respond to this letter and should follow the instructions specified in the enclosed NOV when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the NOV. The NRC's review of your response to the NOV will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

If you contest the violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region II; (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) Larry Harris at the Nuclear Fuel Services facility.

In accordance with Title 10 of the *Code of Federal Regulations* Section 2.390 of the NRC's "Rules of Practice and Procedure," a copy of this letter and its enclosures will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

Should you have any questions concerning these inspections, please contact Leonard Pitts of my staff at 404-997-4708.

Sincerely,

/**RA**/

Marvin D. Sykes, Chief Projects Branch 1 Division of Fuel Facility Inspection

Docket No. 70-143 License No. SNM-124

Enclosures:

- 1. Notice of Violation
- 2. NRC Inspection Report 70-143/2017-004 w/Attachment: Supplementary Information

cc: (See page 3)

J. Duling

cc: Mike McKinnon Operations Director Nuclear Fuel Services, Inc. Electronic Mail Distribution

Richard A. Freudenberger Safety & Safeguards Director Nuclear Fuel Services, Inc. Electronic Mail Distribution

Debra G. Shults Director, TN Dept. of Environment & Conservation Electronic Mail Distribution

Doris D. Hensley Mayor, Town of Erwin 211 N. Main Avenue P.O. Box 59 Erwin, TN 37650

Greg Lynch Mayor, Unicoi County P.O. Box 169 Erwin, TN 37650

Johnny Lynch Mayor, Town of Unicoi P.O. Box 169 Unicoi, TN 37692

David W. Deming Manager, Program Field Office – NFS Naval Nuclear Laboratory 1205 Banner Hill Rd Erwin, TN 37650

J. Duling

SUBJECT: NUCLEAR FUEL SERVICES, INC. - U. S. NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT NUMBER 70-143/2017-004 AND NOTICE OF VIOLATION

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NO

Nuclear Fuel Services, Inc. Erwin, TN

Docket No. 70-143 License No. SNM-124

During an NRC inspection conducted on July 24 to 27, 2017, one violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is described below:

10 CFR 71.5(a) states, in part, "Each licensee who transports licensed material outside the site of usage, as specified in the NRC license or where transport is on public highways shall comply with the applicable requirements of the DOT regulations in 49 CFR parts 107, 171 through 180, and 390 through 397, appropriate to the mode of transport."

Contrary to the above, on January 10, 2017, the licensee failed to comply with applicable DOT requirements in 49 CFR parts 107, 171 through 180, and 390 through 397 for transporting licensed material outside the site of usage, where transport is on public highways.

This is a Severity Level IV violation (Section D.1).

Pursuant to the provisions of 10 CFR 2.201, Nuclear Fuel Services, Inc. is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region II, within 30 days of the date of the letter transmitting this Notice of Violation. This reply should be clearly marked as a "Reply to a Notice of Violation"; and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken; and (4) the date when full compliance will be achieved.

Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice of Violation, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document Agency Documents Access and Management System, accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html to the extent possible, it should not include any personal, privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal, privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you

NOV

request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

If Classified Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR Part 95.

In accordance with 10 CFR 19.11, you may be required to post this NOV within two working days.

Dated this 17th day of October, 2017

U. S. NUCLEAR REGULATORY COMMISSION REGION II

Docket No.:	70-143
License No.:	SNM-124
Report No.:	70-143/2017-004
Licensee:	Nuclear Fuel Services, Inc.
Facility:	Nuclear Fuel Services, Inc.
Location:	Erwin, TN 37650
Dates:	July 1 through September 30, 2017
Inspectors:	L. Harris, Senior Resident Inspector R. Gibson, Jr., Senior Fuel Facility Inspector (Paragraphs C.6/D.1) G. Goff, Fuel Facility Inspector (Paragraph B.3) T. Grice, Fuel Facility Inspector M. Ruffin, Fuel Facility Inspector K. Womack, Fuel Facility Inspector (Paragraph B.2)
Approved by:	M. Sykes, Chief Projects Branch 1 Division of Fuel Facility Inspection

EXECUTIVE SUMMARY

Nuclear Fuel Services, Inc. NRC Integrated Inspection Report 70-143/2017-004 July 1 – September 30, 2017

Inspections were conducted by the resident and regional inspectors during normal and offnormal hours in safety operations, radiological controls, effluent control and environmental protection, transportation, as well as other areas. The inspectors performed a selective examination of licensee activities that was accomplished by direct observation of safetysignificant activities and equipment, tours of the facility, interviews and discussions with licensee personnel, and a review of facility records. One Severity Level (SL) IV violation (VIO) of NRC requirements was identified.

Safety Operations

- Plant operations were performed safely and in accordance with license requirements. Items relied on for safety were properly implemented and maintained in order to perform their intended safety function. (Paragraphs A.1, and A.2)
- The Nuclear Criticality Safety program was implemented in accordance with the license application and regulatory requirements. (Paragraphs A.3)
- The Fire Protection program and systems were adequately maintained in accordance with the license application and regulatory requirements. (Paragraphs A.4)

Radiological Controls

- No violations of more than minor significance were identified in the area of Radiation Protection. (Paragraphs B.1 and B.2)
- The Environmental Protection program was implemented in accordance with the license application and regulatory requirements. (Paragraph B.3)

Facility Support

- The post maintenance testing and surveillance programs were implemented in accordance with the license application and regulatory requirements for work control and safety-related equipment testing. (Paragraphs C.1 and C.2)
- Adverse conditions were adequately identified, evaluated, and entered into the corrective action program. (Paragraph C.3)
- The Plant Modifications program was implemented in accordance with the license and regulatory requirements. (Paragraph C.4)
- The Emergency Preparedness program was implemented in accordance with the Emergency Plan and regulatory requirements. (Paragraph C.5)

• With the exception of the Severity Level (SL) IV violation documented in the Other Areas section of this report, the Transportation Program was implemented in accordance with the license and regulatory requirements (Paragraph C.6)

Other Areas

• An SL IV violation was identified for failure to comply with applicable DOT requirements for transporting licensed material outside the site usage on public highways, as required by 10 CFR 71.5(a). (Paragraph D.1).

Attachment:

Supplementary Information

REPORT DETAILS

Summary of Plant Status

The facility began and continued through the inspection period with the following process areas operating: Naval Fuel Manufacturing Facility (FMF) and the Blended Low Enriched Uranium (BLEU) Preparation Facility (BPF) which includes the Uranium (U)-Metal, U-Oxide, Solvent Extraction and the down-blending lines.

A. <u>Safety Operations</u>

1. Plant Operations Routine (Inspection Procedures (IPs) 88135 and 88135.02)

a. Inspection Scope

The inspectors performed routine tours of the fuel manufacturing areas housing Special Nuclear Material (SNM), reviewed log sheets, and interviewed operators, front-line managers, maintenance mechanics, radiation protection (RP) staff, and process engineering personnel regarding issues with plant equipment and to verify the status of the process operations. The inspectors observed operational and shift turnover meetings throughout the inspection period to gain insight into safety and operational issues.

During the inspection period, the inspectors interviewed operators, front-line managers, maintenance technicians, engineers, RP technicians, and nuclear materials control technicians to verify that each of the individuals demonstrated adequate knowledge of the nuclear criticality safety (NCS) posting requirements, hazards, and the operations procedures associated with their assigned duties.

The routine tours included walk-downs of the FMF, BPF, commercial development line, miscellaneous storage areas, the Waste Water Treatment Facility (WWTF), and Building 440. During routine tours, the inspectors verified that operators were knowledgeable of their duties and attentive to any alarms or annunciators at their respective stations. The inspectors observed activities during normal and upset conditions to verify that operators complied with procedures and material station limits. The inspectors noted that safety controls, including Item Relied On For Safety (IROFS), were in place, properly labeled, and functional to ensure proper control of SNM. The inspectors verified the adequacy of communications between supervisors and operators within the operating areas. The inspectors reviewed operator log books, standard operating procedures (SOPs), maintenance records, and Letters of Authorization (i.e., temporary procedures) to obtain information concerning operating trends and activities. The inspectors verified that the licensee actively pursued corrective actions for conditions requiring temporary modifications and compensatory measures.

The inspectors performed periodic tours of the outlying facility areas to determine that equipment and systems were operated safely and in compliance with the license. The inspectors focused on potential wind-borne missile hazards, potential fire hazards with combustible material storage and fire loading, hazardous chemical storage, the physical condition of bulk chemical storage tanks and piping, storage of compressed gas containers, and potential degradation of plant security features. The inspectors attended various plan-of-the-day meetings and met daily with the Plant Shift Superintendent

throughout the inspection period in order to determine the overall status of the plant. The inspectors evaluated the adequacy of the licensee's response to significant plant issues as well as their approach to solving various plant problems during these meetings.

b. Conclusion

No violations of more than minor significance were identified.

2. Safety System Inspection (IP 88135.04)

a. Inspection Scope

The inspectors performed walk-downs of safety-significant systems involved with the processing of SNM. As part of the walk-downs, the inspectors verified as-built configurations matched approved plant drawings. The inspectors interviewed operators to confirm that plant personnel were familiar with the assumptions and controls associated with the IROFS systems and instrumentation for maintaining plant safety. The inspectors also verified that IROFS assumptions and controls were properly implemented in the field. The inspectors reviewed the related Integrated Safety Analysis (ISA) to verify system abilities to perform functions were not affected by outstanding design issues, temporary modifications, operator workarounds, adverse conditions, or other system-related issues. The inspectors also verified that there were no conditions that degraded plant performance and the operability of IROFS, safety-related devices, or other support systems essential to safety system performance. Safety significant functions, tests, inspections to assure operability of the fire suppression system as a safety system for 302 and 303 production areas were specifically inspected.

To determine the correct system alignment, the inspectors reviewed procedures, drawings, related ISAs, and regulatory requirements such as Title 10 of the *Code of Federal Regulations* (10 CFR) Section 70.61, "Performance Requirements." During the walk-downs, the inspectors verified all or some of the following as appropriate:

- Controls in place for potential criticality, chemical, radiological, and fire safety hazards
- Process vessel configurations maintained in accordance with NCS Evaluations
- Correct valve position and potential functional impacts such as leakage
- Electrical power availability
- Major system components correctly aligned, labeled, lubricated, cooled, and ventilated
- Hangers and supports correctly installed and functional
- Lockout/Tag-Out program appropriately implemented
- Cabinets, cable trays, and conduits correctly installed and functional
- Visible cabling in good material condition
- No interference of ancillary equipment or debris with system performance

b. Conclusion

No violations of more than minor significance were identified.

3. Nuclear Criticality Safety (IP 88135.02)

a. Inspection Scope

During daily production area tours, the inspectors verified that various criticality controls were in place, that personnel followed criticality station limit cards, and that containers were adequately controlled to minimize potential criticality hazards. The inspectors reviewed a number of criticality-related IROFS for operability. The inspectors noted that operators were knowledgeable of the requirements associated with IROFS. The inspectors performed the tours inside various process areas when SNM movements were taking place within the facility.

As part of routine day-to-day activities on-site, the inspectors reviewed corrective action program (CAP) entries associated with criticality safety aspects. The inspectors evaluated the licensee's response to such entries and, if needed, had discussions with NCS engineers to determine safety significance and compliance with procedures.

b. Conclusion

No violations of more than minor significance were identified.

4. Fire Protection Quarterly (IP 88135.05)

a. Inspection Scope

During routine plant tours, the inspectors verified that transient combustibles were being adequately controlled and minimized in selected process areas. Various fire barriers and doors were examined and found to be properly maintained and functional in accordance with site procedures. The inspectors reviewed active fire impairments in selected process areas and determined they were implemented per site procedure.

The inspectors conducted a walk-down of licensed material storage areas including vaults, in buildings 306 and 311 and determined that the Pre-Fire plan drawing matched the as-found condition for various fire protection components like extinguishers, and postings. The material condition of fire protection components was adequate. The inspectors noted the fire water supply to the surrounding area fire hydrants was properly aligned for operational status.

The inspectors reviewed a sampling of fire-related Problem Identification, Resolution, and Correction System (PIRCS) entries to verify that corrective actions were appropriate and that appropriate compensatory actions were implemented as applicable. The inspectors observed an emergency exercises on September 13 and 27, 2017, that included a fire brigade response. The inspectors attended the post drill critique.

b. Conclusion

No violations of more than minor significance were identified.

B. <u>Radiological Controls</u>

1. Radiation Protection Quarterly (IP 88135.02)

a. Inspection Scope

During tours of the production areas, the inspectors observed RP controls and practices implemented during various plant activities including the proper use of personnel monitoring equipment, required protective clothing, and frisking methods for detecting radioactive contamination on individuals exiting contamination controlled areas. The inspectors noted that plant workers properly wore dosimetry and used protective clothing in accordance with applicable Special Work Permits (SWPs). The inspectors also noted that radiation area postings complied with plant procedures and included radiation maps with up-to-date radiation levels. The inspectors monitored the operation of RP instruments and verified calibration due dates.

The inspectors performed numerous partial reviews of SWPs during the inspection period in different operational areas, but conducted a more thorough review for the following SWPs and posted radiologically controlled areas:

- SWP 17-09-4014, Building 302 Repair Area 100/200
- SWP 16724 and 16727 Maintenance Building 301
- SWP 16754, Repair Area 800

b. Conclusion

No violations of more than minor significance were identified.

2. Radiation Protection (IP 88030)

a. Inspection Scope

The inspectors interviewed licensee management and staff to verify that the licensee monitored employees for occupational exposure to radiation who were likely to receive, in one year, a dose in excess of Title 10 of the Code of Federal Regulations (10 CFR) 20.1502(a) levels. The inspectors reviewed the licensee's procedures and calculation system for evaluating and using personnel monitoring data to control and minimize exposures to determine whether these aspects were appropriate to account for occupational radiation doses to personnel resulting from exposures to licensed material. The inspectors interviewed licensee management to determine whether the personnel dosimeter processor maintains accreditation from National Voluntary Laboratory Accreditation Program (NVLAP) in accordance with 10 CFR 20.1501(c). The inspectors observed operators and technicians during walk downs to verify that they were properly wearing dosimetry.

The inspectors interviewed RP technicians and toured both the bioassay and whole body counting facilities to verify that the bioassay and whole body counting programs were in compliance with license requirements for occupational dose analysis. The inspectors reviewed the methodology and programmatic assumptions made by the licensee in the calculation of dose to verify that the licensee correctly calculated the dose to workers using conservative assumptions. The inspectors reviewed procedures, interviewed RP technicians, and observed the use of analytical equipment and processes used to evaluate internal exposures to verify that the internal dose results were determined in accordance with 10 CFR 20.1204, and that internal dose was monitored as required by 10 CFR 20.1502(b).

The inspectors reviewed procedures and training records for the respiratory protection program and interviewed both program managers and operators to verify that the respiratory protection program was in compliance with 10 CFR 20.1703 and that users were properly trained and qualified in the use of respiratory protection equipment. The inspectors reviewed procedures and training records and observed respirator equipment use to verify that maintenance and training programs for respiratory protection equipment met program requirements and requires respirators be operationally tested prior to each use. The inspectors reviewed respirator users a medical exam and fit tests them prior to using respirators.

The inspectors reviewed records for dose to workers to verify that the dose results include Total Effective Dose Equivalent (TEDE), lens dose equivalent, and shallow dose equivalent and were less than the limits in 10 CFR 20.1201. The inspectors observed that the maximum TEDE to an individual worker for the year was 0.148 rem. The inspectors reviewed personal contamination event logs and trends to verify the intake of uranium did not exceed the limits of 10 CFR 20.1201(e). The inspectors reviewed air sampling characterization results to verify that assumptions used in calculations were conservative and meet the intent of regulations.

The inspectors interviewed licensee management and reviewed safety committee meeting minutes to verify that the licensee uses, to the extent practical, engineering controls to achieve occupational doses As Low As Reasonably Achievable (ALARA) in accordance with 10 CFR 20.1101(b), as well as using process or engineering controls to control the concentration of airborne radioactive material in accordance with 10 CFR 20.1701. The inspectors reviewed the biennial effluent reports and surface contamination smear activity trends to determine whether the ALARA program monitored, trended, and, where practical, addressed adverse exposure trends. The inspectors reviewed procedural changes and interviewed licensee staff to determine if ALARA principles were considered during the engineering phase of changes. The inspectors reviewed ventilation IROFS to verify that the licensee was in compliance with procedures and license requirements for ventilation.

The inspectors reviewed PIRCS entries to determine whether the licensee implemented a program to evaluate safety-significant events in the area of RP. The inspectors reviewed selected events related to the RP program to verify that the licensee identified the issue in a timely manner and identified actions to correct the problem and prevent recurrence. The records reviewed included PIRCS entries 59115, 59237, and 59457. The inspectors also evaluated selected events to verify that the licensee complied with the reporting requirements of 10 CFR Part 20.

b. Conclusion

No violations of more than minor significance were identified.

3. Effluent Control and Environmental Protection (IP 88045)

a. Inspection Scope

The inspectors interviewed licensee staff on program and personnel changes and reviewed the environmental safety organizational chart to verify if there were any significant program or personnel changes within the last 12 months. The inspectors noted that there was one personnel change, an internal hire. The inspectors subsequently reviewed the position description requirements and the individual's resume to determine satisfactory qualification.

The inspectors reviewed documentation to determine that the program functions remained independent from operations and in accordance with license requirements. The inspectors reviewed procedures revised since the last inspection to verify that any changes made were in accordance with licensee requirements and did not diminish safety.

The inspectors reviewed a recent audit (HP Audit for Environmental Radiation Program, 4th Qtr. 2016, November 30, 2016) to determine that environmental program activities were performed in accordance with license requirements and to verify that identified corrective actions were implemented in accordance with the license application. The inspectors also reviewed an audit performed by the licensee on General Engineering Laboratories, LLC, which provides analytical services to the licensee's environmental department, to determine that the licensee verified the adequacy of this contractor.

The inspectors reviewed the July to December 2016 and January to June 2017 biannual effluent reports to determine that the licensee was in compliance with 10 CFR 70.59 and 10 CFR 20 Appendix B Table 2 levels for air and liquid effluent discharges. The inspectors also reviewed records and reports to verify that the licensee was in accordance with retention requirements stated in 10 CFR 20.2107.

The inspectors observed air filter collections for stacks and off-site ambient air monitors and off-site liquid sample collections to verify that licensee actions were in compliance with approved procedures. The inspectors verified that air monitoring equipment was calibrated and functional. The inspectors also investigated the basis for the air flow set points on the air samplers. Specifically, inspectors reviewed the procedure (NFS-HS-A-78, Field Measurements of Effluent Stack/Duct Velocities, Revision (Rev.) 8, March 31, 2017) and performed calculations to verify the accuracy of these set points.

The inspectors also reviewed monthly records for WWTF liquid effluent discharges to the Nolichucky River for the last six months in order to determine that the radioactive concentration in these discharges was less than Federal regulatory limits and licensee action levels (WWTF Discharge Monitoring Reports for Outfall Discharge to the Nolichucky River, April – September 2017).

The inspectors observed sewer sampling and flow meter checks at the west ditch and flow meter checks at Banner Spring in order to determine the licensee's activities were in accordance with procedures (NFS-HS-B-16, Routine Sampling of Sanitary Sewer, Rev. 34, August 7, 2017 and NFS-HS-B-73, Analysis of Environmental Liquid and

Environmental Air Samples, Rev. 14, May 12, 2017). Inspectors also reviewed the sewer results from reports over the last eight months to determine the results were below 10 CFR 20.2003 limits.

The inspectors reviewed the public dose assessment to verify that the highest possible dose to individuals of the public did not exceed the 10 CFR 20.1301(a)(1) limit for 2016 and currently in 2017. The inspectors reviewed the airborne portion of the public dose assessment provided in the quarterly ALARA reports to verify that the result was in compliance with the ALARA constraint required by 10 CFR 20.1101(d).

The inspectors reviewed the radiological results for ground water to determine that the results were in compliance with license requirements and procedures (NFS-HS-B-41, Routine Groundwater Sampling Procedure, Rev. 28, March 6, 2017).

The inspectors reviewed several corrective actions related to the environmental program (please see the list in the attachment) entered into the licensee's CAP since November 2016, to determine that the licensee was entering issues and correcting them in accordance with the site procedures.

b. <u>Conclusion</u>

No violations of more than minor significance were identified.

- C. Facility Support
 - 1. Post Maintenance Testing (IP 88135.19)
 - a. Inspection Scope

The inspectors witnessed and/or reviewed the post-maintenance tests (PMTs) listed below to verify that procedures and test activities confirmed safety systems and components (SSCs) operability and functional capability following the described maintenance. The inspectors reviewed the licensee's completed test procedures to ensure any of the SSC safety function(s) that may have been affected were adequately tested, that the acceptance criteria were consistent with information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed and/or reviewed the test data to verify that test results adequately demonstrated restoration of the affected safety function(s). The inspectors verified that PMT activities were conducted in accordance with applicable work order instructions or licensee procedural requirements. Furthermore, the inspectors verified that problems associated with PMTs were identified and entered into the licensee's PIRCS.

- SRE Test: N306H2DILXXX800 IROFS 306-307 800
- SRE Test: N307H2DILXXX800 IROFS 306-307 800
- SRE Test: N105VALVEGANG26 IROFS 105-LAB
- SRE Test: N333LVLALRM3F04 IROFS 333-UOXIDE

b. Conclusion

No violations of more than minor significance were identified.

2. Surveillance Testing (IP 88135.22)

a. Inspection Scope

The inspectors witnessed portions of and/or reviewed completed test data for the following surveillance tests of risk-significant and/or safety-related systems to verify that the tests met the requirements of the ISA, commitments, and licensee procedures. The inspectors confirmed the testing effectively demonstrated that the SSCs were operationally capable of performing their intended safety functions and fulfilled the intent of the associated safety-related equipment (SRE) test requirement.

The inspectors discussed surveillance testing requirements with operators performing the associated tasks and determined that their procedural knowledge was adequate. The inspectors verified that any test equipment or standards used to conduct the test were within calibration. The inspectors determined that effective communications between personnel performing these tests were used to complete each activity.

- SRE Tests N302XXCO2SYSTEM IROFS 300-GENERAL
- SRE Test N301PRSLEEVE001 IROFS 301-GENERAL

b. Conclusion

No violations of more than minor significance were identified.

3. Corrective Action Program (CAP) Review (IP 88135)

a. Inspection Scope and Observations

The inspectors reviewed the PIRCS to ensure that items adverse to safety were being identified and tracked to closure in accordance with program procedures. The inspectors routinely attended daily PIRCS screening committee meetings and periodic Corrective Action Review Board meetings to evaluate site management's response and assignment of corrective actions or investigations to various issues. The inspectors also performed daily screenings of items entered into the CAP to aid in the identification of repetitive equipment failures or specific human performance issues for follow-up.

The inspectors reviewed CAP entries that occurred during the inspection period to assess and evaluate the safety significance of issues. For items identified to be more safety significant, the inspectors conducted an additional evaluation to verify the licensee was adequately addressing and correcting the issues to prevent recurrence.

Furthermore, the inspectors conducted periodic reviews of licensee audits and thirdparty reviews of safety significant processes to determine their effectiveness and whether the licensee entered results into PIRCS. Specifically the inspectors reviewed the following:

• Hazardous Waste Compliance Evaluation Inspection, conducted by the Tennessee Department of Environment and Conservation, dated July 6, 2017

b. Conclusion

No violations of more than minor significance were identified.

4. Permanent Plant Modifications (IP 88135.17)

a. Inspection Scope

The inspectors reviewed records, work packages, and supporting documentation associated with a change out of 306 Blower–A801 to verify that the changes had not affected system operability or availability. The inspectors reviewed licensee procedures NFS-CM-002, Identification and Control of Configuration Items, and NFS-WM-001-1, Work Management Program Description, and selected ongoing and completed work activities to verify that the change was consistent with the design control documents and requirements. The inspectors verified that operational details associated with the changes had been incorporated into appropriate operating procedures as needed. The inspectors performed field observations with licensee personnel to verify that the as built configuration was in accordance with design documents. The inspectors observed or reviewed testing activities associated with the change and assessed the impact on interfacing operating systems. Post system changes were verified to be operational and associated SRE tests completed. Specifically, the inspectors reviewed the following:

- Change of Authorization 306 Blower-A801;
- Work Request # 263555
- Lockout/Tagout Permit for Blower A801
- SRE Test N306H2DILXXX800
- b. Conclusion

No findings of more than minor significance were identified.

5. Emergency Preparedness (EP) Drill (IP 88135)

a. Inspection Scope

On September 13, 2017, and September 27, 2017, the inspectors observed a safety emergency exercises. These drills were intended to identify any licensee weaknesses and deficiencies in alarm notification, and Emergency Response Organization response. The inspectors observed emergency response operations at the site of the drill and the Emergency Response Center, and on-scene coordination to verify that licensee conformance with applicable emergency plan implementing procedures. The inspectors also attended the post-drill critiques to compare any inspectors-observed weaknesses with those identified by the licensee in order to verify whether the licensee was properly identifying EP-related issues.

b. Conclusion

No findings of more than minor significance were identified.

6. Transportation (IP 86740)

a. Inspection Scope

The inspectors evaluated whether the licensee had established and maintained an effective management-controlled program to ensure radiological and nuclear safety in the receipt, packaging, delivery to a carrier, and as applicable, to private carriage of licensed radioactive materials. The inspectors also evaluated whether observed transportation activities were in compliance with the applicable NRC (10 CFR Parts 20 and 71), and DOT (49 CFR Parts 171-178) regulations. The observed activities included the preparation of packages by the shipping coordinators for the shipment of liquid uranyl nitrate (LR 230) Transport Unit Packages containing licensed material to Westinghouse. The observed activities also included the packaging of ES 3100 containers of fresh fuel preparing for shipment to BWXT.

The inspectors reviewed a number of shipping records involving the shipment and receipt of licensed material and the shipment of waste materials for disposal. The inspectors verified that the licensee recorded the required information on the packaging and shipping orders such as the transportation index, criticality safety index, package activity, labeling, and placards.

The inspectors reviewed training records to ensure that the licensee had administered hazardous materials transportation training to applicable personnel as required by DOT 49 CFR 172.704 and the license. The inspectors observed the material handlers prepared for shipment LR 230 units and ES 3100 containers.

The inspectors verified that the licensee met the 10 CFR 71.21 conditions required to use the general license provision for transport of licensed material. The inspectors reviewed audits of the transportation program and verified that the licensee was performing periodic audits of the program as required by the license application. The results of the audits were appropriately addressed in the CAP.

The inspectors reviewed the licensee's CAP (PIRCS) entries in the area of transportation for the past 24 months to determine if deviations from procedures and unforeseen process changes affecting transportation were documented and investigated promptly. Also, the inspectors evaluated the corrective actions associated with the incident involving the improper categorization of a shipment of contaminated metal samples, and verified that the completed corrective actions were in accordance with the licensed application.

b. Conclusion

No violations of more than minor significance were identified.

D. Other Areas

1. <u>Event Follow-up</u>

a. Inspection Scope

The inspection included a follow-up on a transportation event where the improper categorization of a shipment of contaminated metal samples (i.e., unregulated shipment as opposed to a Limited Quantity or a Surface Contaminated Object) was shipped to BWXT as non-radioactive and non-DOT regulated.

b. Conclusion

Failure to Comply with Applicable DOT Requirements for Transporting Licensed Material Outside the Site Usage on Public Highways

Introduction:

The inspectors identified a self-revealing, SLIV, cited violation of 10 CFR 71.5(a) for the licensee's failure to comply with DOT requirements when an error in shipment was made when licensed material was packaged and shipped as non-radioactive and non-DOT regulated.

Description:

On June 13, 2017, the licensee began the process of implementing a Work Request to remove a section from the X804 vessel (sidearm) to be shipped to BWXT for metallurgical testing at the Lynchburg Technology Center (LTC). Maintenance personnel cut the gooseneck section of the vessel into four sample sections which were prepared and sealed individually into four bags. The four bags were place into one larger bag and transported to the 300 area for surveying. Since the items were to be shipped to the LTC, the administrator for the Transportation Waste Management Program, requested completion of a detailed survey. On June 20, 2017, a RADCON technician performed smears and direct frisking on the external surface of each of the individual bags containing the sample sections. No contamination was detected. The individual sample sections within the bags were not surveyed.

These survey results were recorded and submitted to the administrator for the Transportation Waste Management Program. It was clearly noted on the survey records that only external smears and frisks had been performed on the bags and the destination for the samples was the 300 warehouse, not an offsite location. The four sample bags were returned to the larger bag and moved to the 300 warehouse on June 20, 2017, and the survey results were submitted to the administrator. The administrator did not recognize that the survey that was performed did not include sufficient information to properly classify the package for shipment offsite.

Through interviews and review of the survey records, the inspectors learned that the NFS RADCON technician performed a basic survey to allow for the onsite transfer of the sample sections from the 300 complex to the 300 warehouse. A more comprehensive survey involving contamination smears and direct frisking of the individual sections was not done to properly classify the contents for shipping to the LTC. According to the

RADCON technician, he did not understand or recall being informed that the survey results would be used to classify the samples for shipping offsite to the LTC in Lynchburg, Virginia.

The large outer bag holding the four samples was marked "Caution Surface Contamination" and packaged in a five gallon metal drum (Type A container), usually used for transporting radioactive materials. On June 21, 2017, an external measurement of radiation levels on the package was taken. The external radiation measurement was less than 0.1 mrem/hr dose rate and the maximum removable contamination was 7 dpm/100 cm². Both measurements were below regulatory limits. On June 22, 2017, NFS shipped the package via FedEx as non-radioactive and "NON-DOT REGULATED" to the LTC.

The package arrived at the LTC on June 23, 2017. On June 26, 2017, technicians at the LTC performed a receipt inspection of the shipment. Although no labels or markings were visible on the package when it arrived at the LTC, technicians, aware of the contents and expecting the shipment to contain radioactive material, implemented precautionary radiological controls prior to opening. A survey of the samples revealed smearable contamination levels greater than 10,000 dpm/100cm² and direct frisk contamination levels up to 60,000 dpm/100cm² on the surface of the sections. NFS was immediately notified of the shipping error. No contamination was found on the external surfaces of the packaging.

In a letter to the NRC dated July 26, 2017, NFS submitted a written report that stated, "On June 26, 2017, Nuclear Fuel Services, Inc. (NFS) was made aware of an error in shipment involving licensed material for which 10 CFR 20.2203(a)(3)(ii) requires a report. This letter provides the 30-day written report of that event". The quantity of licensed radioactive material shipped exceeded the quantity in Appendix C to Part 20 by greater than a factor of 10. The Appendix C limit for licensed material requiring labeling for Uranium 234/235 is 0.001 microCuries. The total quantity of activity in the shipment was estimated to be approximately 0.1 microCuries. These limits are established to ensure that individuals handling or using the material or working in the vicinity of the containers, are aware of and take precautions to avoid or minimize exposures.

The licensee did not adequately mark and label the package as required by approved procedures. Section 5.8 of procedure NFS-WST-007, Rev. 4, states, in part, "Determine whether or not the material may be placed into one of the SCO categories as given in 49 CFR 173.403." Section 5.8.1 of the procedure states, in part, "SCO-1 material is generally limited to items contaminated to a maximum of 2,200 dpm/100cm² removable alpha activity and 22,000,000 dpm/100cm² fixed alpha activity". Section 5.8.2 states, "SCO-II material includes material with contamination about 100 times, or higher than SCO-I." Section 5.8.3 states, "All packages containing SCO material must include the requirement for marking SCO packages, Radioactive-SCO." The maximum smearable level recorded at the LTC was 10,817 dpm/100cm² alpha contamination and 60,000 dpm/100cm² fixed alpha contamination. At a minimum, the package was required to be labeled as Radioactive-SCO to comply with plant procedures and DOT regulations.

Specifically, the licensee shipped the package containing the sample items as non-DOT regulated with contamination on the items above the maximum of 2,200 dpm/100cm² removable alpha. The licensee's failure to comply with DOT requirements constitutes a violation of 10 CFR 71.5(a), which states, in part, "Each licensee who transports licensed

material outside the site of usage, where transport is on public highways shall comply with the applicable requirements of the DOT regulations in 49 CFR parts 107, 171 through 180, and 390 through 397, appropriate to the mode of transport."

Analysis:

The inspectors determined that the noncompliance is more than minor based on Inspection Manual Chapter 0616, Appendix B, Section 5, Example e because "an item presented for shipping was not properly classified, described, packaged, marked, or labeled."

There were no actual health or safety consequences. The materials were properly controlled prior to packaging, packaged in a container that meets the requirements of Type A, and upon receipt properly controlled. External radiation and contamination levels of the shipping container prior to shipment were not above background within the sensitivity of the instrumentation. Radiological surveys upon receipt were comparable to pre-shipment surveys and there were no evidence of any damage or tampering of the container. Therefore, the violation was characterized as SLIV in accordance with Example 6.8.d.5 of the NRC Enforcement Policy.

Enforcement:

10 CFR 71.5(a) states in part, "Each licensee who transports licensed material outside the site of usage, as specified in the NRC license or where transport is on public highways shall comply with the applicable requirements of the DOT regulations in 49 CFR parts 107, 171 through 180, and 390 through 397, appropriate to the mode of transport."

49 CFR 173.427(a)(7)(vi), states in part, that for domestic transportation only, packaged and unpackaged Class 7 (radioactive material containing less than an A₂ quantity are excepted from the marking and labeling requirements of this subchapter; however, the exterior of each package Class 7 (radioactive) materials must be stenciled or otherwise marked "RADIOACTIVE-SCO." The failure to adequately mark a package containing items with contamination levels above the maximum of 2,200 dpm/100cm² removable alpha resulted in a non-DOT regulated shipment.

Contrary to the above, on January 10, 2017, the licensee failed to comply with applicable DOT requirements in 49 CFR parts 107, 171 through 180, and 390 through 397 for transporting licensed material outside the site of usage, where transport is on public highways. Specifically, the licensee shipped the package containing the sample items as non-DOT regulated with contamination on the items above the maximum of 2,200 dpm/100cm² removable alpha.

This issue was entered into the licensee's CAP and they initiated an investigation. As part of the corrective actions, the licensee assembled a team to evaluate cause and identify corrective actions. The licensee also initiated an internal document that requires additional health physics and technical reviews of sample and non-waste/non-product shipment.

This violation was identified through an event and is being cited in accordance with the NRC enforcement Policy because the licensee failed to comply with applicable DOT requirements for transporting licensed material outside the site usage on public highways, and will be tracked as 70-0143/2017-004-01.

E. <u>Exit Meetings</u>

The inspection scope and results were presented to members of the licensee's staff at various meetings throughout the inspection period and were summarized on July 27, and September 21 and at the end of the quarter on October 11, 2017, to J. Duling and his staff. No dissenting comments were received from the licensee. Proprietary and classified information was discussed but not included in the report

1. KEY POINTS OF CONTACT

Name	Title
C. Anderson	Waste Management Section Manager
C. Barron	Emergency Preparedness Manager
C. Brown	MC&A Department Section Manager
N. Brown	NCS Department Section Manager
C. Buchanan	Environmental Health Physicist
T. Cloyd	Fire Protection Engineer
A. Combs	T&WM Ops Manager, Supervisor 4
D. Coulter	Senior Health Physicist
R. Dailey	Engineering Director
D. Deming	Manager, Program Field Office (Bettis)
R. Dotson	Quality Manager
J. Duling	President
B. Edwards	HEU Material Handler
J. Eidens	BMPC Program Field Office (KAPL)
T. Evans	Security Section Manager
J. Faddis	Environmental Unit Manager
R. Freudenberger	Safety & Safeguards Director
J. Griffith	Environmental Scientist
J. Hagemann	Work Management Section Manager
C. Hale	Environmental Specialist
D. Harris	HEU Material Handler
J. Hensley	Radiation Protection Technician
C. Jarrett	HEU Material Handler
M. Jones	Waste Management Specialist
T. Knowles	Licensing Manager
G. Lambert	Radiation Protection Technician
L. Ledford	Waste Programs Administrator
R. Lind	Quality Assurance Unit Manager
J. May	T&WM Ops Unit Manager
B. McKeehan	Transportation and Waste Unit Manager
B. McAlister	Environmental Scientist
M. McKinnon	Operations Director
M. Moore	Environmental Protection & Industrial Safety Section Manager
A. Morie	Safety & Safeguards Program Manager
S. Morie	Decommissioning Environmental Unit Manager
J. Nagy	Nuclear Safety Officer Chief
R. Rice	Radiation Protection and Health Physics Unit Manager
D. Rogers	Waste Management & Decommissioning Section Manager
K. Ryan	T&WM Operations Clerical
A. Sabisch	Licensing and ISA Manager
S. Sanders	Training Manager
R. Shackelford	Nuclear Safety & Licensing Section Manager
R. Storey	Contiguration Management Unit Manager
R. Whitson	Decommissioning Environmental Unit Manager

2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

70-0143/2017004-01 VIO

Failure to comply with applicable DOT requirements for shipping contaminated items via commercial carrier on public highways.

Discussed

None

<u>Closed</u>

None

3. INSPECTION PROCEDURES USED

86740	Transportation
88030	Radiation Protection
88045	Effluent Control and Environmental Protection
88135	Resident Inspection Program For Category I Fuel Cycle Facilities
88135.02	Plant Status
88135.04	ISA Implementation
88135.05	Fire Protection
88135.17	Permanent Plant Modifications
88135.19	Post Maintenance Testing
88135.22	Surveillance Testing

4. DOCUMENTS REVIEWED

Records:

21T-17-0442, HP Audit of the Radiation Protection Program, 1st Quarter, 2017 21T-17-0505, HP Audit for Safety Work Permit Program, 1st QTR 2017 21T-17-0514, HP Audit for Respiratory Protection Program, Q1, 2017 21T-17-0614, HP Audit for Radiological Posting and Labeling, Q2, 2017 21T-17-0673, HP Audit for Radiation Worker Training Program, 2nd QTR 2017 21T-17-0696, HP Audit for Process Ventilation and Containment Program, 2nd QTR 2017 21T-17-0866, Environmental Protection Agency Protective Action Guide for Administration of Potassium Iodine 21T-17-0875, HP Audit for Internal/External Dosimetry Program, 3rd QTR 2017 Background Reports for Evaporated Liquids, Air Filters, & Solubility Filters, June 5, 2017 – September 11, 2017 Biannual Effluent Monitoring Report, July – December 2016, dated February 20, 2017 Biannual Effluent Monitoring Report, January – June 2016, August 28, 2017 Calibration records for air pump, micrometer, velocity meters, February 2017 and May 2017 Calibration Status Report for Airflow Meters for Stacks, dated September 13, 2017 Lab Instrument Checks (pH meter, balance, pipette), January – August 2017 NFS-HS-B-73, Rev. 13 (Analysis of Environmental Liquid & Environmental Air Samples NFS Monthly Radioactive Airborne Effluent Reports, November 2016 – June 2017 Monthly Sewer Equipment, Monthly Banner Spring Equipment, & Monthly Northwest Storm Watch Ditch Equipment Inspections, January – August 2017:

NFS-HS-B-16, Rev. 32, Attachment D

NFS-HS-B-97, Rev. 1, Attachment E

NFS-HS-B-97, Rev. 1, Attachment F

NFS ALARA Program:

- 2nd Quarter 2017 ALARA Performance Report for Environmental-Radiological, dated September 7, 2017
- 1st Quarter 2017 ALARA Performance Report for Environmental-Radiological, dated June 8, 2017
- 4th Quarter 2016 ALARA Performance Report for Environmental-Radiological, dated March 9, 2017

Quarterly Assessment of Radioactive Liquid & Gaseous Effluents:

- 4th Quarter 2016, dated March 10, 2017
- 1st Quarter 2017, dated June 15, 2017

Quarterly Assessment of Offsite Ambient Radiation:

4th Quarter 2016, dated March 1, 2017

1st Quarter 2017, dated May 31, 2017

2nd Quarter 2017, dated August 29, 2017

WWTF Discharge Monitoring Reports for Outfall Discharge to the Nolichucky River,

April – September 2017 (NSDES Permit No. TN0002038)

Bill of Lading No. P28757

Certificate of Compliance 9291, Rev. 9

30-Day written report, dated July 26, 2017

Internal audit by Quality Assurance Program (QA-17-07)

External audits by Nevada National Security Site, and

US Department of Energy Environmental Management

Work request 263559

Standard Safety Work Permit, SWP #17-10-XXX

H&S Survey Report dated June 20, 2017

Shipping Approved Vendor List

Procedures:

- NFS-GH-01. Contamination Control, Rev. 35, dated October 13, 2015
- NFS-GH-03, Safety Work Permits, Rev. 19, dated June 8, 2015
- NFS-GH-07, Respiratory Protection Program, Rev. 20, dated August 31, 2016
- NFS-GH-07-01, Respiratory Storage and Acquisition, Rev. 3, dated August 17, 2017
- NFS-GH-21, Process Enclosure and Exhaust Ventilation Systems, Rev. 6, dated May 26, 2016

NFS-GH-29, Proper Use and Handling of Lapel Samplers, Rev. 8, dated May 31, 2010

NFS-GH-40, Gaseous Effluent Action Points, Rev. 8, dated January 25, 2016

- NFS-GH-909, Environmental Protection Program, Rev. 9, dated November 16, 2015
- NFS-GH-908, Radiation Protection Program, Rev. 7, dated February 1, 2016
- NFS-HS-A-27, Routine Estimation of Offsite Dose from Radioactive Gaseous Effluents, Rev. 10, dated August 16, 2017
- NFS-HS-A-41, Radiation Dose to the Embryo/Fetus, Rev. 3, dated August 31, 2017 NFS-HS-A-54, Effluent Control & Environmental Monitoring Action Levels and MDC
- Requirements, Rev. 14, dated May 12, 2017
- NFS-HS-A-78, Field Measurements of Effluent Stack/Duct Velocities, Rev. 8, dated March 31, 2017

- NFS-HS-A-82, Routine Estimation of Offsite Dose From Ambient Radiation, Rev. 2, dated August 6, 2017
- NFS-HS-B-16, Routine Sampling of Sanitary Sewer, Rev. 34, dated August 7, 2017
- NFS-HS-B-18, Collection and Analysis of NFS Stack Samples, Rev. 24, dated January 25, 2016
- NFS-HS-B-20, Routine Sampling of Environmental Media, Rev. 25, 07/17/2017
- NFS-HS-B-39, Radioactive Material Receipt and Shipping Surveys, Rev 25, August 21, 2017
- NFS-HS-B-41, Routine Groundwater Sampling Procedure, Rev. 28, dated March 6, 2017
- NFS-HS-B-51, Operation of the Cleaning Process in Building 104, Rev 7, dated June 12, 2017
- NFS-HS-B-67, Storm Water Procedure, Rev. 11, dated February 23, 2017
- NFS-HS-B-73, Analysis of Environmental Liquid and Environmental Air Samples, Rev. 14, dated May 12, 2017
- NFS-HS-B-97, Sampling of Banner Spring Branch & Northwest Storm Water Ditch, Rev. 2, dated April 3, 2017
- FM-WST-032, Uniform Straight Bill of Lading, Rev. 7
- NFS-WST-026, Handling/Shipping Instruction for the ES-3100 Drum, Rev. 12
- NFS-HS-B-39, Radioactive Material Receipt and Shipping Surveys, Rev. 24
- NFS-HS-B-30, Contamination Surveys, Rev. 13
- NFS-WST-003, Procedure for Receiving Nuclear Material, Rev. 26
- NFS-ACC-033, Shipping Procedure for Nuclear Material, Rev. 43
- SOP-335-A, General Requirements for Waste Handling/Packaging, Rev. 18
- SOP-409-45, Loading and Staging LR 230 Containers, Rev. 14
- NFS-GH-63, Unrestricted Equipment/Item Release, Rev. 3
- NFS-WST-007, Transportation & Waste Management Department, Rev. 4
- NFS-GH-29, Proper Use and Handling of lapel Samplers, Rev 008 A
- NFS-GH-62-01 NFS Monthly Combustible Control Inspections, Rev. 007
- NFS-GH-27 Impairments to Fire Protection Systems, Rev, 012
- NFS-GH-66 Oper /Maint Bldg 302 Co2 Fire System, Rev. 006
- HS-B-58 Nuclear Criticality Safety Evaluations, Rev. 014
- NFS-GH-44-05 ISA and Fire Safety Reviews, Rev. 000

Other Documents:

BWXT Audit of GEL, dated May 26, 2016

Generic Analysis Report for Wells 52, 98A, 99A, and 100A (Groundwater Monitoring)

- HP Audit for Environmental Radiation Program, 4th Qtr. 2016, dated November 30, 2016
- LOA-HS-17-008, Letter of Authorization, dated June 29, 2017

Maps - 2017 Semi-Annual Site-wide Remediation Report:

- Dissolved Uranium Concentrations in Groundwater (April-June 2017), color map
 - Groundwater Remediation, North Site-Former RBG
 - Groundwater Remediation, 200 Complex Area
 - Groundwater Remediation, Maintenance Shop Area
- MRAD-25 Final Report, 11/22/2016, (quality control/crosscheck with ERA)
- MRAD QC/QA data round robin data from 105 Rad Lab and ENV Lab
- NSPDES DMR-QA Study 37 Final Completed Report, dated August 10, 2017, (quality control/crosscheck with ERA & Phenova)
- Organizational Chart for the Environmental Safety Department, 2017
- Position description for Environmental Scientist III
- Resume of employee recently hired into the Environmental Scientist III position

PIRCS Written as a Result of the Inspection:

58987, 58985, 58988, 59036, 58991, 58990, 58983, 58984, 59017, 59023, 59096, 59139, 59151, 59155, 59210, 594345, 60556, 60661, 60662, 60827, 60686

PIRCS Reviewed:

22743, 55780, 56591, 56592, 58542, 58853, 58943, 58963, 58979, 58978, 58969, 58997, 59000, 59001, 59004, 59011, 59019, 59024, 59034, 59041, 59045, 59060, 59062, 59070, 59075, 59082, 59092, 59102, 59115, 59116, 59117, 59134, 59140, 59197, 59204, 59217, 59220, 59237, 59244, 59246, 59255, 59256, 59260, 59278, 59299, 59304, 59313, 59326, 59327, 59334, 59338, 59360, 59364, 59365, 59374, 59403, 59409, 59428, 59429, 59434, 59444, 59445, 59456, 59457, 59461, 59473. 59482, 59483, 59490, 59501, 60503, 60538, 60540, 60552, 60554, 60567, 60582, 60591, 60595, 60630, 60632, 60735, 60774, 60779, 60790, 60813, 60821, 60822